

S.N. 09/681,374

RD-27,727

The listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF THE CLAIMS**

**Claim 1** (currently amended): A composition for electron emitters of gas discharge devices comprising a mixture of carbon nanotubes and oxygen-containing compounds of only alkaline-earth metals, wherein said carbon nanotubes have a diameter in a range from about 1 nm to about 200 nm, and said composition is coated on said electron emitters.

**Claim 2** (currently amended): The A composition according to claim 1 for electron emitters of gas discharge devices comprising a mixture of carbon nanotubes and oxygen-containing compounds of alkaline-earth metals, wherein said oxygen-containing alkaline-earth metals are alkaline-earth metal oxides.

**Claim 3** (canceled)

**Claim 4** (currently amended): The composition according to claim 3 2 wherein said diameter is in a range from about 1 nm to about 100 nm.

**Claim 5** (previously presented): The composition according to claim 2 wherein a proportion of said carbon nanotubes in said mixture of carbon nanotubes and alkaline-earth metal oxides is in a range from about 0.1 percent by volume to about 95 percent by volume.

**Claim 6** (previously presented): The composition according to claim 5 wherein said proportion is from about 5 percent by volume to about 90 percent by volume.

**Claim 7** (currently amended): A composition for electron emitters of gas discharge devices comprising a mixture of carbon nanotubes and oxygen-containing compounds of only alkaline-earth metals, wherein said carbon nanotubes are produced by a catalytic cracking and pyrolyzing of hydrocarbons, and said composition is coated on said electron emitters.

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**Claim 8 (original):** The composition according to claim 7 wherein said hydrocarbons are selected from the group consisting of alkynes and alkenes having 2 to 5 carbon atoms inclusive and alkanes having 1 to 5 carbon atoms inclusive.

**Claim 9 (original):** The composition according to claim 7 wherein said hydrocarbons are selected from the group consisting of substituted and unsubstituted aromatic hydrocarbons having 1 to 3 rings.

**Claim 10 (original):** The composition according to claim 7 wherein a catalyst for said catalytic cracking and pyrolyzing is selected from the group consisting of nickel, cobalt, chromium, iron, mixtures thereof, and alloys thereof.

**Claim 11 (original):** The composition according to claim 10 wherein said catalyst is cobalt chromium alloy.

**Claim 12 (currently amended):** A gas discharge device comprising:

a gas; and

an electron emitter disposed in said gas;

wherein said gas is capable of generating a discharge if interacting with electrons emitted by said electron emitter, and said electron emitter comprises a coating that comprises a mixture of carbon nanotubes and oxygen-containing compounds of alkaline-earth metals on an electrically conductive material coated with a mixture of carbon nanotubes and oxygen-containing compounds of alkaline-earth metals.

**Claim 13 (previously presented):** The gas discharge device of claim 12 wherein said oxygen-containing compounds of alkaline-earth metals are alkaline-earth metal oxides.

**Claim 14 (original):** The composition according to claim 12 wherein said carbon nanotubes have a diameter in a range from about 1 nm to about 200 nm.

**Claim 15 (previously presented):** The gas discharge device according to claim 12 wherein said diameter is in a range from about 1 nm to about 100 nm.

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**Claim 16** (previously presented): The gas discharge device according to claim 13 wherein a proportion of said carbon nanotubes in said mixture of carbon nanotubes and alkaline-earth metal oxides is in a range from about 0.1 percent by volume to about 95 percent by volume.

**Claim 17** (previously presented): The gas discharge device according to claim 16 wherein said proportion is from about 5 percent by volume to about 90 percent by volume.

**Claim 18** (currently amended): A gas discharge device comprising:

a gas; and

an electron emitter disposed in said gas;

wherein said gas is capable of generating a discharge if interacting with electrons emitted from said electron emitter, and said electron emitter comprises a coating that comprises a mixture of carbon nanotubes and oxygen-containing compounds of alkaline-earth metals on an electrically conductive material coated with a mixture of carbon nanotubes and oxygen-containing compounds of alkaline earth metals, wherein said carbon nanotubes are produced by a catalytic cracking and pyrolyzing of hydrocarbons.

**Claim 19** (original): The gas discharge device according to claim 18 wherein said hydrocarbons are selected from the group consisting of alkynes and alkenes having 2 to 5 carbon atoms inclusive, alkanes having 1 to 5 carbon atoms inclusive, and mixtures thereof.

**Claim 20** (original): The gas discharge device according to claim 18 wherein said hydrocarbons are selected from the group consisting of substituted and unsubstituted aromatic hydrocarbons having 1 to 3 rings inclusive.

**Claim 21** (original): The gas discharge device according to claim 18 wherein a catalyst for said catalytic cracking and pyrolyzing is selected from the group consisting of nickel, cobalt, chromium, iron, mixtures thereof, and alloys thereof.

**Claim 22** (original): The gas discharge device according to claim 21 wherein said catalyst is cobalt chromium alloy.

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**Claim 23 (original):** The gas discharge device according to claim 12 further comprising a background gas contained therein, said background gas being selected from the group consisting of helium, neon, argon, krypton, xenon, and mixtures thereof.

**Claim 24 (original):** The gas discharge device according to claim 23 wherein said background gas has a pressure of less than about 0.3 kPa.

**Claim 25 (original):** The gas discharge device according to claim 24 further comprising a mercury vapor contained therein.

**Claims 26-38 (canceled)**

**Claim 39 (previously presented):** The composition according to claim 1 wherein said diameter is in a range from about 1nm to about 50 nm.

**Claim 40 (previously presented):** The composition according to claim 1 wherein said diameter is in a range from about 1 nm to about 20 nm.

**Claim 41 (previously presented):** The composition according to claim 5 wherein said proportion is from about 20 percent by volume to about 90 percent by volume.

**Claim 42 (previously presented):** The composition according to claim 5 wherein said proportion is from about 30 percent by volume to about 90 percent by volume.

**Claim 43 (previously presented):** The gas discharge device according to claim 12 wherein said diameter is in a range from about 1nm to about 50 nm.

**Claim 44 (previously presented):** The gas discharge device according to claim 12 wherein said diameter is in a range from about 1 nm to about 20 nm.

**Claim 45 (previously presented):** The gas discharge device according to claim 16 wherein said proportion is from about 20 percent by volume to about 90 percent by volume.

**Claim 46 (previously presented):** The gas discharge device according to claim 16 wherein said proportion is from about 30 percent by volume to about 90 percent by volume.

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**Claim 47 (new):** A composition for electron emitters of gas discharge devices comprising a mixture of carbon nanotubes and oxygen-containing compounds of alkaline-earth metals, wherein said oxygen-containing compounds are other than oxides, and said carbon nanotubes have a diameter in a range from about 1 nm to about 200 nm.